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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TRINH, TAN H

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 03/15/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/599,042

Applicant(s)

YOUSEFI ET AL.

Examiner

TAN TRINH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 17-19, 23-34 is/are rejected.
- 7) ☒ Claim(s) 12-16 and 20-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12-24-2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 12-16, 20-22, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for allowance

2. The following is a statement of reasons for the indication of allowable subject matter:

The closest reference of Larrick (U.S. Patent No. 6,690, 741) and the prior art of record fails to teach or suggest, the power gating circuit of claim 11, wherein the power gating circuit comprises a digital modulator with a gating control input connected to the power gate input and a band pass filter with a predetermined pass band coupled to a modulator output of the digital modulator, as cited in claim 12.

In addition the switch coupled to the power amplifier, the switch including a feed path selection input; a first feed path coupled to the switch and characterized by a first hop location; and a second feed path coupled to the switch and characterized by a second hop location, as cited in claim 20.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-10, 23-30 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campanella (U.S. Patent No. 6,333,922) in view of Brooks (U.S. Patent No. 6,577,524).

Regarding claims 1 and 28, Campanella teaches a method for power gating a downlink beam frame signal (see figs. 1 and 10), the method comprising: transmitting to form a single frame (see col. 4, lines 1-4 and lines 18-26), at least a first header signal (see fig. 4, col. 6, lines 16-19), a first payload signal (see fig. 4, col. 6, lines 16-19), a second header signal, and a second payload signal (see fig. 4, col. 7, lines 18-33); and Campanella teaches the time gating for the correlation event occurs (see col. 15, lines 5-11). But Campanella fails to teach when a power gating signal is active, removing RF power from at least one of the first header signal and first payload signal in combination, and the second header signal and second payload signal in combination, thereby reducing DC power consumption.

However, Brooks teaches the gating signal is active, removing RF power from at least one of the first header signal and first payload signal in combination, and the second header signal and second payload signal in combination, thereby reducing DC power consumption (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Campanella system and by providing the teaching of Brook on the transmission gating technique thereto in order to provide the power consumption.

Regarding claims 2 and 29, Campanella teaches the hopping the downlink beam frame signal between at least two terrestrial cells (see fig. 1, and col. 3, line 42-col. 4, line 7).

Regarding claim 3 and 30, Campanella teaches the step of activating the power gating signal based on the terrestrial cell which the downlink beam frame signal is currently hopped (see fig. 1, and col. 3, line 42-col. 4, line 7 and col. 15, lines 1-8).

Regarding claims 5 and 32, Campanella teaches the step of activating the power gating signal in order to maintain at least one data queue on average approximately at preselected occupancy level (col 6, lines 5-8 and col. 12, lines 38-47).

Regarding claims 6 and 33, Campanella teaches the step of transmitting a first flush signal and a second flush signal (see fig. 11, sym1-sym (n)), But Campanella fails to teach wherein removing power from at least one of the first header signal, first payload signal, and first flush signal in combination, and the second header signal, second payload signal, and second flush signal in combination.

However, Brooks teaches wherein removing power from at least one of the first header signal, first payload signal, and first flush signal in combination, and the second header signal, second payload signal, and second flush signal in combination (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Campanella system and by providing the teaching of Brook on the transmission gating technique thereto in order to provide the power consumption.

Regarding claim 7, Brooks teaches wherein removing power comprises removing power for the first header signal, the first payload signal, the second header signal, and the second payload signal (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

Regarding claim 8, Brooks teaches wherein removing power comprises removing power from the first payload signal, the second header signal, and the second payload signal (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

Regarding claim 9, Brooks teaches wherein removing power comprises removing power from the first header signal, the first payload signal, and the second payload signal (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

Regarding claims 10 and 34, Brooks teaches wherein transmitting comprises transmitting to form a single frame a first header signal, a first payload signal, a second header signal, a second payload signal, at least one additional header signal, and at least one additional payload signal; when the power gating signal is active, removing power from at least one of the first header signal and first payload signal in combination, the second header signal and second

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payload signal in combination, and the additional header signal and the additional payload signal in combination (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

Regarding claim 23, Campanella teaches a power gated frame signal (see figs. 1 and 10) comprising: a single frame comprising at least a first header signal, a first payload signal a second header signal, and a second payload signal (see col. 4, lines 1-4 and lines 18-26). But Campanella fails to show wherein at least one of the first header signal and first payload signal in combination, and the second header signal and second payload signal in combination is power gated.

However, Brooks teaches wherein at least one of the first header signal and first payload signal in combination, and the second header signal and second payload signal in combination is power gated (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Campanella system and by providing the teaching of Brook on the transmission gating technique thereto in order to provide the power consumption.

Regarding claims 24-27, Brooks teaches at least one additional header signal, and at least one additional payload signal, and wherein at least one of the first header signal and first payload signal in combination, the second header signal and second payload signal in combination, and the additional header signal and the additional payload signal in combination is power gated (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

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5. Claims 4 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campanella (U.S. Patent No. 6,333,922) in view of Brooks (U.S. Patent No. 6,577,524) further in view of Trans (U.S. Patent No. 20030086515).

Regarding claims 4 and 31, Campanella and Brooks fail to teach the step of activating the power-gating signal based on a statistical multiplexing estimate of downlink frame utilization.

However, Trans teaches the step of activating the power gating signal based on a statistical multiplexing estimate of downlink frame utilization (see page 54, session [0844 and page 56, session [0874]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Campanella and Brooks system by provide the teaching of Trans on the power gating signal base on a statistical multiplexing estimate so that the delay bound guarantees on the packet delivered.

6. Claims 11 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campanella (U.S. Patent No. 6,333,922) in view of Larrick (U.S. Patent No. 6,690,741) further in view of Brooks (U.S. Patent No. 6,577,524).

Regarding claim 11, Campanella teaches power-gating module for power gating a downlink beam frame signal (see figs. 1 and 10). But Campanella fails to show the power gating module comprising: power amplifier for amplifying for transmission frame signals including at least a first header signal, a first payload signal, a second header signal, arid a second payload signal; a power gating circuit coupled to the power amplifier.

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However, Larrick teaches the power gating module comprising: power amplifier for amplifying for transmission frame signals (see fig. 8, power gate control 134) and a power gating circuit coupled to the power amplifier (see fig. 8, item 134 and switch control 162-163). But Larrick fails to teach a power-gating signal to remove power from at least one of the first header signal and first payload signal in combination, and the second header signal and second payload signal in combination before amplification by the power amplifier.

However, Brooks teaches power-gating signal to remove power from at least one of the first header signal and first payload signal in combination, and the second header signal and second payload signal in combination before amplification by the power amplifier (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Campanella and Larrick system and by providing the teaching of Brook on the transmission gating technique thereto in order to provide the power consumption.

Regarding claims 17-19, Brooks teaches wherein the power-gating signal is active during the first header signal, the first payload signal, the second header signal, and the second payload signal (see figs. 1-2 and col. 2, line 43-col. 3, line 2).

Response to Arguments

7. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schuchman (U.S. Patent No. 5,638,399) discloses multi-beam satellite communication system with user terminal frequencies having transceiver using the same set of frequency hopping.

9. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for Technology Center 2600 only)

*Hand-delivered responses should be brought to Crystal Park II,
2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (703) 305-5622. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

Tan H. Trinh
Art Unit 2684
March 2, 2004

Nick Corsaro
NICK CORSARO
PATENT